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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/751,488

01/06/2004

Susanne Klein

30002178-4

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02/08/2005

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EXAMINER

CALEY, MICHAEL H

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/751,488

Applicant(s)

KLEIN, SUSANNE

Examiner

Michael H. Caley

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/4/05 has been entered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Domash (U.S. Patent No. 5,937,115) in view of Deacon et al. (U.S. Patent No. 5,488,681 "Deacon").

Domash discloses a light guide having:

a planar light guiding medium (Figure 4A element 30) being of a liquid crystal material (Column 2 line 64 – Column 3 line 37, Column 5 lines 20-50) and having a top light emitting surface (Figure 4A, waveguide marked 36) and one or

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more side faces disposed around the top light emitting surface (Figure 4A, waveguide marked 38, opposing waveguide);

a plurality of light pipes, each light pipe having a collector end for collecting light and an output end, the output ends being arranged along the side faces so as to introduce the collected light into the guiding medium (Figure 4A, waveguide marked 38, opposing waveguide);

wherein the output ends of the light pipes are distributed evenly along the or each side face (one per side face).

Domash fails to explicitly disclose the plurality of light pipes as arranged to introduce the collected light into the guiding medium to be emitted at the light emitting surface. Domash, however, teaches a separate embodiment of the optical switch in which light pipes are arranged at two sides of a liquid crystal layer and light is emitted through a top light emitting surface (Figures 11 and 12; Column 13 line 43 – Column 14 line 26). Also, Deacon teaches an analogous type of switching device in which inputs may be bi-directional (Figure 3 elements 80 and 82, Figure 9, and Figure 12 elements 302, 306, and 307).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have configured an optical switch such as disclosed by Domash to collect light from light pipes arranged along side surfaces of a liquid crystal layer and emit the light through the top surface of the liquid crystal layer. For example, in Figure 12 of Deacon, the prior art teaches inputs (elements 285 and 306) at sides orthogonal to the output direction (element 308). Applying such a teaching to the device disclosed in

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Figure 12 of Domash would advantageously allow a greater number of inputs to be incorporated into the switch by adding another input on a side surface of the grating analogous to the device disclosed in Figure 12 of Deacon. One would have been motivated to modify Domash accordingly to increase the number of inputs in a switch without adding more switching components.

***Allowable Subject Matter***

Claims 1-7 are allowed.

Reasons for indicating allowable subject matter remain as indicated in the Office Action mailed on 11/10/04.

***Response to Arguments***

Applicant's arguments filed on 1/4/05 with respect to claim 8 have been considered but are moot in view of the new ground(s) of rejection.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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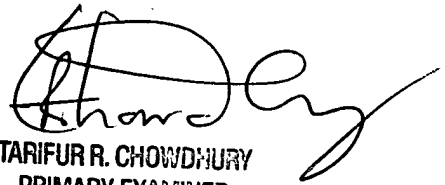
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael H. Caley

January 27, 2005



mhc



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER